

Prioritizing the Most Important Information from Contractors' BIM Handover for Firefighters' Responsibilities

Authors : Akram Mahdavi Parsa, Tamera McCuen, Vahideh Karimimansoor

Abstract : Fire service is responsible for protecting life, assets, and natural resources from fire and other hazardous incidents. Search and rescue in unfamiliar buildings is a vital part of firefighters' responsibilities. Providing firefighters with precise building information in an easy-to-understand format is a potential solution for mitigating the negative consequences of fire hazards. The negative effect of insufficient knowledge about a building's indoor environment impedes firefighters' capabilities and leads to lost property. A data rich building information modeling (BIM) is a potentially useful source in three-dimensional (3D) visualization and data/information storage for fire emergency response. Therefore, this research's purpose is prioritizing the required information for firefighters from the most important information to the least important. A survey was carried out with firefighters working in the Norman Fire Department to obtain the importance of each building information item. The results show that "the location of exit doors, windows, corridors, elevators, and stairs", "material of building elements", and "building data" are the three most important information specified by firefighters. The results also implied that the 2D model of architectural, structural and way finding is more understandable in comparison with the 3D model, while the 3D model of MEP system could convey more information than the 2D model. Furthermore, color in visualization can help firefighters to understand the building information easier and quicker. Sufficient internal consistency of all responses was proven through developing the Pearson Correlation Matrix and obtaining Cronbach's alpha of 0.916. Therefore, the results of this study are reliable and could be applied to the population.

Keywords : BIM, building fire response, ranking, visualization

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